SEPTEMBER, MDCCCLIII.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CXXXI.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

E. NEWMAN, 9, DEVONSHIRE STREET

Observations on the Harmlessness of the Hedgehog.

By the Rev. ALFRED CHARLES SMITH.

MR. CATCHPOOL, in his note on the hedgehog (Zool. 4008), seems to take exception to the epithet "harmless" as applied by me to that animal; and, in support of his opinion, gives a strong instance of the carnivorous propensities of Master Piggy. Fearing, therefore, lest silence should imply consent to the inferences derived by Mr. Catchpool from his discovery that a hedgehog dined on fowl,—first, that he was therefore anything but harmless; and, secondly, that he was in consequence worthy of death, — I must ask leave to say a few words in his defence, as I should be extremely sorry to see so interesting an animal doomed to even greater persecution than he already receives at the hands of the thoughtless and ignorant.

Now, when I called the hedgehog "harmless," I was perfectly aware that he was occasionally carnivorous. I believe his appetite embraces a great variety of food; he is well known to eat snakes, worms, slugs, snails, frogs, toads, beetles, insects and mice, in addition to various roots, acorns, and other wild fruits, when they have fallen to the ground. These things I consider to form his every-day diet; but I acknowledge, at the same time, that he will *occasionally* eat a young rabbit, and, it seems, a young fowl, when he can find one; perhaps, too, we must *sometimes* add to his bill of fare, a few eggs, and, in one case, even bees, (Zool. 2637): though his most bitter foe will hardly desire the destruction of his race for this peculiar propensity in an individual.

Assuming then that noxious reptiles, insects, roots and fallen fruits form his customary food, I would beg his accusers, in condemning him for an occasional error, not to lose sight of his virtues. There are many notices of him in the 'Zoologist,' proving him to be a determined destroyer of venomous reptiles; and though, in all honesty, I must own there are also therein several records of his carnivorous habits, these seem to be exceptional cases, occurring from lack of his ordinary food, and only proving how omnivorous an animal he is. Indeed, even Mr. Catchpool, had he considered the hedgehog as essentially a destructive carnivorous animal, and viewed him in the same light in which we are apt to look upon the fox, the weasel, and the polecat, would scarcely have thought it necessary to record his invasion of the hen-house, and his sanguinary attack on the pullet. But I do hope that an occasional fault will not alone be remembered, and

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his many good deeds be forgotten. Surely, it would be hard to condemn his race, and take from him his good name, because he has been known to have satisfied his hunger with forbidden food! Why, at this rate, what living creature can escape? Certainly not man, who from the days of Adam has transgressed through greediness; and there is scarcely a species of beast, bird, fish, reptile or insect, but has occasionally been guilty of atrocious cruelty, amounting sometimes to murder, and sometimes even to cannibalism, and all the effect of ungovernable hunger.

I own that the hedgehog is a great favourite with me. As a boy, I have on several occasions carried one home from the woods, and confined him in a rabbit-hutch for a time, where he would soon lose his natural timidity, and come out of his dark corner to be fed: and I now have a family group of old and young, stuffed, and forming a very pretty case. I know no animal which always gave me a greater idea of innocence than the much maligned and persecuted little hedgehog. To see him come trotting down the path in a summer evening's ramble through the silent woods, to stand aside and watch him, ignorant of your presence, smelling, and snuffing, and poking his nose among the leaves and grass, and jogging on in his quiet way; and then to call to mind the absurd tales of his cow-sucking propensities, still firmly believed by most of our labourers, and his persecution consequent thereon, is surely enough to excite compassion in his accusers, and pity, "near akin to love." And then, if you suddenly make him aware of your presence, his only defence is to retire within himself: he has no notion of doing battle in self-defence; he knows he cannot escape by flight; so he rolls himself into a ball and awaits the result. It is said that even the worm when trodden on will turn on the aggressor, but not so the hedgehog; he meets the heavy blow, the deadly kick, the murderous attack of his cruel persecutors, with an enduring patience and silent resignation enough to cause remorse in the breast of his foe.

Respecting this curious habit of rolling himself up into a ball, and presenting on all sides a bristling array of spines, Pliny tells us that hence he derives his Latin name "Echinus": — "Nomen habet ἀπὸ τοῦ ἒχειν ἑαυτὸν, quòd convolutus ita se condat et contineat, ut nullæ carnes appareant; vel ἀπὸ τοῦ μὴ δύνασθαι ἔχεσθαι, quòd teneri minimè possit ob aculeos, quibus totus inhorrescit et contegitur: unde echinum vocârunt spinosum castaneæ operculum."—Plin. lib. 27, cap. 9.

But to return once more to his defence. Surely, when we consider his retiring disposition, for he is essentially a crepuscular animal, seldom making his appearance till evening; the locality he prefers, a thick wood, from which he rarely emerges but to trot round the hedge-rows in search of food; his natural timidity, never venturing out till all is still, and ever and anon stopping to listen; his *customary* diet, such as I have above described, and with which no one can find fault, I think he well deserves to be called "harmless," although an instance may here and there occur of his forgetfulness of his natural shyness, and his intrusion into the hen-house.

The barn-owl and tawny owl were once supposed to be guilty of endless enormities, and were ranked amongst the most destructive and noxious of birds; but since Mr. Waterton's admirable Essays in their defence, no naturalist can be found so bold as to question their innocence, though in those very Essays one is shown to have occasionally varied his diet with game and the other with fish. I wish the hedgehog had been treated to a whole Essay to himself from the same inimitable pen; but, as it is, I would draw attention to the phrase, "*harmless* little creature," as applied to the hedgehog by that prince of naturalists: and the author of the 'Journal of a Naturalist' describes it as "*the most harmless* and least obtrusive creature in existence."

In conclusion, let me remark of the latter part of Mr. Catchpool's account, that though perhaps the death of the hedgehog was the only result to be expected from the man when he discovered the attack on his poultry, yet it is refreshing to find that such dire vengeance does not always follow the discovery of poor piggy's peccadilloes; for in a former number (Zool. 1634) we read that when caught in the act of devouring eggs, he was only removed from the scene of his festivities, but was still permitted to enjoy his liberty. This humane sparer of the poor hedgehog in the midst of his many foes, was a very Hypermnestra among the Danaides: and when he carried forth the prickly ball to a distance from his house, he may have addressed him in the words of that exemplary young lady: —

"I; velut nactæ vitulos leænæ
Singulos (eheu!) lacerant; ego illis
Mollior, nec te feriam, neque intra
Claustra tenebo.
I, pedes quo te rapiunt, et auræ,
Dum favet Nox, et Venus: i secundo
Omine."

And we may conceive with what a grunt of satisfaction the poor hedgepig must have listened to these immortal lines of the poet, and with what alacrity he must have bustled home and related his adventures to his family, when he found that the coast was clear, and he might venture to unroll.

ALFRED CHARLES SMITH.

Yatesbury Rectory, Calne,
August 10, 1853.

Vespertilio emarginatus. — In Mr. Couch's interesting paper on bats (Zool. 3936), this species is incidentally mentioned without any comment on its rarity, or rather, on its slender claim to a place in the British Fauna. It is said by the original describer, M. Geoffroy, that M. Alexander Brongniart took a single specimen in the English Channel; and he adds, on this very insufficient evidence, that the species is "assez commune en Angleterre." The species which has received this name in Mr. Jenyns' 'Manual,' is V. Daubentonii of Leisler; and Mr. Bell, at the time of publishing his 'British Quadrupeds,' had no further information on the subject. Its claim to rank as a British species has therefore been generally ignored; and as its reintroduction by Mr. Couch is a matter of great interest, perhaps that gentleman will obligingly give some further particulars respecting it.—*Edward Newman.*

Occurrence of the Reddish Gray Bat (Vespertilio Nattereri) *in Ireland.*—I have to record the occurrence of the reddish gray bat (*Vespertilio Nattereri*) at Levitstown, on the confines of the counties of Kildare and Queen's; at which place I was fortunate enough, in company with F. Haughton, Esq., to procure no less than nine full-grown specimens of this bat, and one of Vespertilio Pipistrellus. Seven of them, and the pipistrelle, were captured with a butterfly-net when coming out of a hole in the abutment of Tankardstown Bridge, which here crosses the Barrow: the other two specimens were shot by Mr. Haughton, as they were flying down the river. The following notes of their capture may be useful. The hole out of which the specimens were procured is situated about 4 feet above the water's edge, and seems to contain a large colony of these interesting little animals, as the edges of all the stones around the hole are polished with their running over them. I was led to watch the hole by my friend's saying he had been told that fifty-three bats were seen coming out of the hole at one time, and that he himself had counted thirty-five and upwards. Accordingly, on the 23rd of June, at half-past 8 o'clock in the evening, we repaired to the bridge, and even at that early hour the squeaking and chirping that proceeded from the hole was astonishing. This evening we captured two specimens of V. Nattereri and the pipistrelle. The former began to fly at about half-past 9, the pipistrelle about half an hour later. We counted forty-one bats coming out, and even then there were numbers remaining in the hole, if we might judge from the chirping coming from it. The next evening was harsh and cloudy, and only twenty-nine bats came out: all those captured this evening were V. Nattereri, as V. Pipistrellus was too cunning, and dodged the net. The first bat came out of the hole at about half-past 9: about half an hour previously, however, bats came up the river, doubtless either from the ruins of an old church, or from Levitstown mill. The evening becoming more tempestuous, V. Nattereri began to return to the nests at 10, flying about and almost striking us. It was quite possible to distinguish V. Nattereri from V. Pipistrellus, both on wing and when coming out of their nests, — the former flying nearly straight out, while the latter crept to the edge of the stones, and letting himself fall from thence, flew off. When flying, V. Nattereri did not make such rapid turns as the pipistrelle, nor did it appear so wary: I also remarked that when V. Nattereri was struck into the water, he floundered there for awhile so as to allow me to catch him, whilst the pipistrelle just touched the water and was off. The cry of the pipistrelle is much shriller than that of the other species, and there is an unmistakably offensive smell arising from it, which I did not perceive from V. Nattereri. The next evening was rainy and stormy, and only one bat came out, but a strange one was seen on the river: all was quiet at the hole when we left at about half-past 10. The 27th was a wet day, but cleared up towards evening: only seventeen bats came out. We found that they had grown very wary, and would not come out unless all was quiet; and every time the gunwale of the boat touched the pier of the bridge, there was heard a cry of alarm, very different from their ordinary chirp. They had also learned how to dodge the net, and took a good look out before they ventured to emerge, in several cases running back into the hole as soon as they perceived the net. Whilst the bats were in my possession, I remarked that the tempers of the two were very different, — V. Nattereri being gentle, and more quicky reconciled to confinement, allowing me to handle it without any attempt to bite, whilst the pipistrelle was both more restless and impatient, and, when handled, it squeaked and bit furiously; he also squealed whilst running over the side of the net, which I did not notice Natterer's bat doing. Both bats, when climbing, used the exserted portion of the tail as an additional hand. I should say, that of the bats which I saw coming out of the hole, the proportions of the two species were as follow: —

June 23.	Vespertilio Nattereri,	27.	Vespertilio Pipistrellus,	14.
„ 24.	... ...	20.	... ...	9.
„ 25.	... ...	1.		
„ 27.	... ...	11.	... ...	6.

So that it would appear that V. Nattereri is the commoner of the two. Description and dimensions:—Dentition:—Incisors, $\frac{4}{6}$; Canines, $\frac{2}{2}$; False molars, $\frac{6}{6}$; Molars, $\frac{6}{6}$. Dimensions in inches and twelfths of an inch:—Head and body, male, 2; female, 2.1: tail, male, 1.4; female, 1.3: humerus, 1: ears .7: tragus, .3: breadth of ears across the under surface, .4: spread of wings, male, 9.10½; female, 10. Tragus narrow-lanceolate, with a lobe at the base: ears naked half way down. Back, head, shoulders and face dark reddish gray, base of hairs bluish gray: along the angle of the jaws dark reddish gray: belly whitish gray, roots of hairs nearly black, lightest in the centre: around the anus white: interfemoral light dusky, lines *very numerous*, covered with scattered hairs, and fringed with a margin of stiffish hairs. Claws large and clumsy, ciliated with strong white hairs. Whiskers long and stiff; a slight moustache of dark, nearly black, velvety hairs on the upper lip. All the specimens, with the exception of two, were females: the male specimen in my possession is smaller than any of the females, it is also darker on the under surface, especially along the wings; one of the females had a full-grown fœtus in her uterus. This is the second record of the occurrence of this bat in Ireland, one specimen having been captured by G. Maryan, Esq., in 1844, near Enniskerry, Wicklow, and by him presented to the Dublin Natural History Society, in whose collection it now is, (see Report of the Society, 1844, p. 18). —*John Robert Kinahan; Dublin, July*, 1853.

Inquiry respecting the unknown Eggs lately found near Norwich.—Allow me to ask your correspondent who supplied the note on the above eggs (Zool. 3981), whether the common kingfisher (*Alcedo Ispida*) is found on the Norwich river, as the description of the eggs given by him tallies exactly, except in number, with a nest of eggs of that bird taken near Miltown, on the Dodder, and which I saw. Their identification is rendered the more difficult from your correspondent's not being able to describe the nest; but perhaps further inquiry might procure this information. — *J. R. Kinahan; Sea-view Terrace, Donnybrook, August*, 1853.

Occurrence of the Golden Oriole (Oriolus Galbula) *at Eltham.*—A beautiful example of the golden oriole was shot on the 14th of this month, at Eltham, in Kent, by Mr. Joiner, of Crown Manor Cottage, Eltham, and is now in my possession. Colour of bill dark red; head and back yellow; tail-coverts rich yellow; throat and breast yellowish white; tail yellowish black, tipped with rich yellow. Length 10 inches. — *James Bramley; 9, Winchester Street, Waterloo Town, Bethnal Green, June* 19, 1853.

Note on the Thrush Warbler, (Sylvia turdoides). — The specimen of the thrush warbler which you saw in the flesh, was caught at Dagenham, in Essex, on the 16th of June, 1853.—*J. Green; Naturalist*, 1, *East Road, City Road, July*, 1853.

Correction of a previous Error respecting the Fire-crested Regulus. — I am anxious to correct at once a mistake into which I had fallen when I recorded the fire-crest as having been shot in the Isle of Wight in July, (Zool. 2526). This correction is the more desirable, since all the birds of this species hitherto seen in England, with the single exception of the young bird recorded by Mr. Jenyns, have occurred in the winter months, from November to March; and my erroneous record might seem to favour the opinion that the bird builds in this country, a fact scarcely yet established. My mistake arose from finding a bird, apparently young, from the yellow skin at the gape, and yet with a crest more brilliant than that of an adult male gold-crest with which it was compared, while the form and character of the bill and tail appeared to agree with the description of the young fire-crest. From what I have since learned, I believe my bird to have been a young gold-crest in its second plumage. — *A. G. More; Bembridge, Isle of Wight, August* 6, 1853.

Note on the Nest of the Great Tit (Parus major) *built in a Pump.*—A pair of great tits built their nest this spring in the hollow of my pump, which is a bored tree, with the handle let into a slit in the side, and at about 6 inches from the top, over which is nailed a flat piece of wood as a permanent covering. The birds gained access to the inside of the pump by means of the slit which admits the handle, and formed their nest nearly 2 feet down the bore, so that it could be barely reached at arm's length. I had known of the existence of the nest for nearly a fortnight, as the birds were continually seen passing in and out of the pump, but I wished it to remain undisturbed, until so many complaints were made that the water always contained particles of dirt and weeds, and was unfit for use, that I was compelled to remove the nest. It was found to contain twelve fine full-fledged birds, three of which escaped during its removal; the others being put into a basket, with the idea that the old ones would continue to feed them while in confinement, but they all escaped through a very small aperture in the basket early on the following morning. The nest was sustained in its place in the pump, which is 6½ inches in the bore, by a mass of vegetable matter, such as twigs, dried grass, and especially the somewhat elastic roots of the couch grass (*Triticum repens*), of which it chiefly consisted. These appeared to have been dropped into the pump piece by piece, and allowed to mingle together; but as they approached the nest they were gradually more firmly arranged, and at length much interwoven, so as to form a firm resting-place for the nest itself. There was nothing whatever in the pump to which they could be attached, but the bore was rather roughly executed; and this circumstance, together with the elasticity of the roots employed, appear to have been all that the birds relied on for the support of their nest and young ones. The whole structure must have occupied nearly 3 feet of the bore, as a hooked walking-stick was necessary to reach and extract the mass of roots. The strangest part of the affair is, that at every stroke of the pump, which is in constant use for household purposes, the rod passes up and down by the side of the nest, and being a common single action, it oscillates towards the centre of the nest fully an inch at each stroke, so that it must have materially disturbed the birds during the period of incubation. They were very bold, and would freely enter the pump in the presence of any member of the family. The spot is retired, and much shaded by yew-trees and other foliage.—*Geo. Fitt; Ipswich Road, Norwich, July*, 1853.

"*On the Habits and Structure of the Great Bustard*, (Otis tarda, *Lin.*)" — A paper by Mr. Yarrell, bearing the above title, was read before the Linnean Society on the 18th of January, 1853, of which the following is an abstract: — "The particulars relating to the habits of the bustard are derived from the communications of several friends, who have had opportunities of observing it both in England and elsewhere. The first notice is from C. A. Nicholson, Esq., of Balrath Kells, in the county of Meath, and furnishes remarks on the habits of the bird as observed by him in the neighbourhood of Seville, where it appears to be extremely abundant, the males beginning to arrive in the cultivated country at the beginning of February, in flocks varying (according to Mr. Nicholson's observations) from seven to fifty-three; the old birds always associating together, and those of a year old, which are much smaller, never mixing with them: the young birds have neither beard nor pouch. The females do not arrive till the beginning of April, and come singly, or at most in pairs; the flocks of males then break up, and are met with in parties of three or four, or even singly, spreading their tails on a fine day like turkey-cocks, drooping their wings and expanding their pouches. The sexes appear to live quite separate. In May, the cocks entirely disappear from the cultivated lands, retiring to the extensive grass marshes on the banks of the Guadalquivir, and leaving the hens behind them. The young are hatched in the corn-plains about Seville, and are able to take care of themselves when the corn is cut in July, after which the young birds and hens follow the cocks to the marshes. The birds are very difficult to shoot: the heaviest shot by Mr. Nicholson weighed 28 lbs.; and the largest measured 7 feet 3 inches from tip to tip of wing. Those of a year old weigh from 8 to 10 lbs., and are much the best eating. Their stomachs were found crammed with barley, both leaves and ears, with the leaves of a large-leaved green weed, and with a kind of beetle. When flushed, they generally fly for two or more miles, and sometimes at least 100 yards high. They never try to run, and Mr. Nicholson cannot imagine greyhounds being able to catch bustards, as they are reported to have done. Mr. John Wolley, jun., states that he had never seen the great bustard, or received its eggs, from the neighbourhood of Tangier. While ascending the Guadalquivir, about the month of September, he saw several flocks of four or five birds each, on the level plains which extend along the banks of that river, walking apparently in file, some with their heads down. They did not appear to be timid, or very cautious; but once, as the boat came suddenly round a corner, several of them rose together, springing hastily to the height of 40 or 50 feet, and then turning suddenly and somewhat clumsily, after a few more rapid strokes, sailed along with the arched form of wings so general in game birds. Mr. Yarrell's next notice is derived from a letter in the possession of John Britton, Esq., giving an account of two bustards seen on Salisbury Plain in the summer of 1801, within a fortnight of each other, both of which attacked mounted horsemen, and one of which was captured and kept for some time by Mr. J. Bartley, of Tilstead, by whom it was eventually sold to Lord Temple. The letter gives numerous details of the habits of this bird from the information of Mr. Bartley. J. H. Gurney, Esq., of Norwich, states in a letter to Mr. Yarrell, that, as far as he can learn, the last bustard killed in Norfolk was a female, which was shot at Lexham, near Swaffham, towards the end of the year 1838. The small flock of which this was one, had for several years consisted of females only, the eggs of which were frequently picked up, having been dropped about at random in consequence of the absence of male birds, the latter having become extinct at an earlier date. Fredk. J. Nash, Esq., of Bishop's Stortford, has several times informed Mr. Yarrell, that when taking the field as a young sportsman, he once saw nine flights of bustards in one day, not far from Thetford, in Norfolk. And Gilbert White, of Selborne, mentions in his Diary, under date of November 17, 1782, that being at a lone farm-house between Whorwell and Winchester, the carter told him that about twelve years before, he had seen a flock of eighteen bustards at one time on that farm. Three instances only of the appearance of the bustard in England have been noticed by Mr. Yarrell since the publication of the second edition of his 'History of British Birds;' one, a female, recorded by G. R. Waterhouse, Esq., of the British Museum, as occurring to him in August, 1849, on Salisbury Plain; a second, also a female, shot at Lydd, in Romney Marsh, in January, 1850, and now in the possession of Dr. Plomley, F.L.S.; and the third, shot on the 31st of December, 1851, in Devonshire, and now in the possession of J. G. Newton, Esq., of Millaton Bridestow. Mr. Yarrell proceeds to state that he had long wished to have an opportunity of examining the body of a male bustard, for the purpose of inspecting the gular pouch described by Daines Barrington in his 'Miscellanies,' 1781, and by Edwards in his 'Gleanings of Natural History,' 1811, and thence copied both by Bewick and himself; but no opportunity for so doing occurred until recently. About four years ago the Zoological Society obtained from Germany six or seven young bustards, and one of these (a male) died within a year. The body was examined by Mr. Mitchell and himself, and no gular pouch was found, but this was then attributed to the youth of the bird. In December last another male of this flock, believed to be four years old, died at the Zoological Gardens, and was also examined by Mr. Yarrell. The neck was carefully dissected; but there was no opening under the tongue, and he entirely failed in various attempts to distend any part of the membranes either by fluid or by air. Thus disappointed in his expectation of finding what had been so minutely described, Mr. Yarrell turned to the translation of the anatomical descriptions of the animals dissected by the Royal Academy of Sciences at Paris at the end of the seventeenth century, and found the results of the dissection of six male bustards there given to correspond entirely with his own observations. He found also that Cuvier, in his 'Leçons d'Anatomie Comparée,' refers to no peculiarity in the neck of the male bustard. Professor Owen also entirely confirmed the fact of the absence of any gular pouch by his own dissection of a full-grown bustard, made with the view of obtaining a preparation of that supposed structure for the Museum of the College of Surgeons. Mr. Yarrell is therefore disposed to consider that there must have been some mistake on the part of the writers quoted, as to the species of bird in which that pouch was observed." — *From the 'Proceedings of the Linnean Society,' p.* 207.

Note on Woodcocks nesting in Sutherlandshire, and carrying their Young in their Claws. — "As I know the interest you feel in birds, I send you a statement of what I saw among the woodcocks in Sutherland, where I was during the month of May; and though I have seen as much of woodcocks in Norfolk as most men, I saw more of them in one month in Scotland than I had ever seen before. The wood where they were most common was a birch-wood, of large extent, on the side of a hill sloping down to the river Sheen: there were a good many marshy places in it, but generally speaking it was dry, and the under-cover mostly heather. My first introduction to them happened thus:— On crossing a grassy plain in the centre of the wood, I saw an old bird fly up with a young one in her claws. I was so near that there could be no mistake about it; and on going to the place whence she rose, I found two more young ones squatting together, but no signs of a nest. The young birds were about half grown, and unable to fly. On taking them up they uttered a very shrill note, almost as sharp as that of a bat, which was answered by the mother; and on putting them down they ran to a short distance, where they were joined by the old bird. At three different times I saw the old bird carrying a young one. Her flight was always low and heavy, and exactly like that of a hawk with a bird in its claws. On one occasion, late in the evening, I saw a woodcock cross the road where I was walking, carrying a young one down the hill-side to the river, and return almost immediately alone. As I thought that probably she was going to fetch the rest of the young ones, I watched carefully, but owing to the darkness most probably missed seeing her, though after a few minutes I saw a bird return from the river-side to the hill, in the same track as the former bird had followed, and have little doubt she had taken down another young one, though I had failed to see her pass. It is the common opinion among the keepers &c., that the old birds carry their young ones regularly to feed, and bring them back again in the morning. Woodcocks are very abundant, and almost every evening, at dusk, I saw a considerable number flying off to feed. They generally flew round the wood once or twice before they went off, making a most extraordinary rumbling sort of noise, the last one would suppose a woodcock capable of making. The keeper told me that he constantly found nests of the woodcock, and seemed to think about as much of them as we do of a blackbird's nest."—*E. C. Buxton.**

Note on a Wingless Bird said to inhabit the Island of Tristan d'Acunha. — My friend Mr. F. Strange, of Sydney, lately mentioned to me in a letter which he wrote from Sydney, that he had recently met a person who was conversant with the island of Tristan d'Acunha, and who stated that a wingless bird was found on that island, which was eaten by sailors and others visiting it, and who called the bird the "Island-hen." Mr. Strange's letter gave no further particulars; but should any of the readers of the 'Zoologist' at any time have the means of making inquiries on this curious subject, I trust the opportunity will not be neglected, either by them, or by any ornithologists who may chance to have communication with this remote island. — *J. H. Gurney; Lowestoft, July* 25, 1853.

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* In a letter to J. H. Gurney, Esq., by whom, with Mr. Buxton's kind permission, it has been communicated to the 'Zoologist.'

Note on a Large Viper.—In a "Note on Large Snakes" inserted in the April number (Zool. 3849), I mentioned that the largest viper I had ever measured was 2 feet 1 inch in length. On the 24th of this month I captured one with my butterfly-net, in the Holt, near here, which proved to be exactly 2 feet 3 inches long: its girth also exceeded that of any other viper I have ever seen. I have stuffed it as a curiosity.—*William Henry Hawker; Horndean, Hants, June* 28, 1853.

Catalogue of the Fishes of Orkney and Zetland.

By William Balfour Baikie, M.D.

(Concluded from page 3952).

Order VII.— ANACANTHINI.

Sub-order.—*Thoracici.*

Pleuronectidæ.

Plaice, *Platessa vulgaris.* Abundant.

Flounder, *Platessa flesus.* Very common.

Common Dab, *Platessa limanda.* Tolerably frequent.

Lemon Dab, *Platessa microcephala.* One obtained by Dr. Duguid in August, 1848.

Holibut, *Hippoglossus vulgaris.* Common.

Turbot, *Psetta maxima.* Not rare.

Brill, *Psetta vulgaris.* Rare.

Muller's Top-knot, *Psetta hirta.* Several specimens have been obtained in Orkney.

Bloch's Top-knot, *Psetta punctata.* One specimen procured in Zetland by Professor Fleming.

Sole, *Solea vulgaris.* Rare.

Brosmiidæ.

Torsk, *Brosmius vulgaris.* Rare in Orkney, abundant in Zetland.

Merlucciidæ.

1. *Merlucciinæ.*

Hake, *Merluccius vulgaris.* Not common.

2. *Lotinæ.*

Ling, *Lota molva.* Common.

Three-bearded Rockling, *Motella vulgaris.* One specimen obtained at Stromness a few years ago.

Five-bearded Rockling, *Motella Mustela.* Very common.

Gadidæ.

Cod, *Morrhua vulgaris.* Very abundant.

Haddock, *Morrhua Æglefinus.* Common.

Whiting Pout, *Morrhua lusca.* Occurs in Zetland.

Poor Cod, *Morrhua minuta.* Two specimens obtained at Kirkwall in August, 1851.

Whiting, *Merlangus vulgaris.* Not common.

Coal-fish, *Merlangus carbonarius.* Extremely abundant.

Pollack, *Merlangus Pollachius.* Common.

Sub-order.—*Apodes.*

Ophidiidæ.

Sand Eel, *Ammodytes Tobianus.* Rare.

Sand Launce, *Ammodytes Lancea.* Common.

Order VIII.—PHARYNGOGNATHI.

Sub-order.—*Acanthopterygii.*

Cyclo-Labridæ.

Ballan Wrasse, *Labrus maculatus.* Not common.

Gilt-head, *Crenilabrus melops.* Rare.

Small-mouthed Wrasse, *Acantholabrus exoletus.* Two specimens caught in Kirkwall Bay in December, 1850.

Sub-order.— *Malacopterygii.*

Scomberesocidæ.

Gar-fish, *Belone vulgaris.* Not uncommon.

Saury Pike, *Scomberesox Saurus.* Rare.

Order IX.—MALACOPTERI.

Sub-order.—*Abdominales.*

Salmonidæ.

Salmon, *Salmo Salar.* Rare.

Gray Trout, *Salmo eriox.* Rare.

Salmon Trout, *Salmo Trutta.* Abundant.

Common Trout, *Salmo Fario.* Abundant.

Charr, *Salmo Salvelinus.* Rare. Three specimens obtained in Waas, in 1832, by J. E. Heddle, Esq.

Argentine, *Scopelus Humboldtii.* Several specimens have been procured during the last few years by Dr. Duguid and Mr. R. Heddle.

Clupeidæ.

Herring, *Clupea Harengus.* Abundant.

Sub-order.—*Apodes.*

Murænidæ.

Sharp-nosed Eel, *Anguilla acutirostris.* Common.

Broad-nosed Eel, *Anguilla latirostris.* Less common: first identified in Orkney by Dr. Duguid.

Conger, *Conger vulgaris.* Common.

Order X.—DERMOPTERI.

Sub-order.—*Cyclostomi.*

Petromyzontidæ.

Sea Lamprey, *Petromyzon marinus.* A specimen occurred several years years ago at Stromness, and one has since been obtained by Dr. Duguid.

WM. BALFOUR BAIKIE.

Haslar Hospital, July 20, 1853.

Note on Tench and Pike. — It is generally considered amongst keepers and fishermen that the tench is a fish which all others of a voracious nature, such as pike, perch, trout, and eels, equally avoid feeding on; and the reason given is, that the slime of the former possesses a healing quality of which other kinds of fish are aware, and that, when wounded or ill, they resort to this physician of the waters, and, by rubbing themselves against the tench, extract a remedy for their ailments, for which, instead of paying any fee, they all agree in considering the former so great a benefactor that it ought to go free, and be protected from all harm. How far it becomes one to doubt the truth of this belief, is unnecessary to state; but I may be excused in relating the following circumstance which I witnessed a few days since, and leave the conclusion to be drawn from it to others, as to the *sentiments* imputed to the other kinds of fish in abstaining from feeding on the tench. In a pit or small pool at the back of the house, it is the custom to put such fish of different kinds as are likely to be wanted for the table during the summer, and consequently there is a pretty good store of fish kept in the pit, amongst which are some carp, and many good tench, varying from 1 to 4 ℔s. in weight; and there are also a few pike put with them, of from 4 to 9 ℔s., as well as some perch, and but a few roach, for the pike to feed on. These different kinds of fish can be easily seen swimming about in the clear water, and the loud splash of the pike indicates that he has seized some victim, and brought it to an untimely end. The other day I saw, at some distance from the side of the pit, and deep in the water, a bright shining substance slowly moving about, and which I could by no means satisfactorily make out; but after watching it for some considerable time, and endeavouring to discover its nature, I at last perceived that across the middle portion projected a dark band, looking as if it were fastened to it and pushing it along: and this turned out to be the head of a large pike. The latter, having seized a tench, of about 3 ℔s. weight, crossways, which it was totally unable to swallow, was gently swimming about with its head somewhat elevated and its tail sunk lower in the water, vainly endeavouring to get the tench down its throat, or to twist it round so that the head of the tench might the more easily lead the way for the rest of its body further into the capacious jaws of its captor; but this could not be effected. The latter therefore continued to carry its prize slowly about the pit, as a dog would a bone. After watching the two fish for some time while engaged in this way, I saw the pike approach the side of the pond, and the keeper, happening to be near at hand, brought a casting-net and threw over both; but unfortunately a bough in the water kept the net from closing, so that the two fish escaped, and were afterwards seen in the pit still in the same position as before, the pike retaining a firm hold of the physician. At last, however, I thought I perceived the latter freed from the tenacious grasp of the pike, who probably finding it impossible to devour so large a prize, let it go free, and the tench, no doubt, rejoicing at its timely escape, considered the attack of its foe a most ungrateful return for favours conferred. This is the only instance I ever met with in which the tench was attacked by any other fish, though I have constantly had them put, together with pike and perch, in small stews and other places, where the absence of food for the predatory species has induced them to seize upon almost every other living thing: all other kinds of fish, rats, young ducks and moor-hens have fallen a sacrifice to the all-devouring pike, but not the tench; and keepers always avoid setting their trimmers or trolling for pike with a tench for a bait, alleging as a reason that no other fish will touch it.—*W. H. Slaney; Hatton Hall, August* 10, 1853.

Note on Uraster glacialis and Muller's Top-knot. — Since I sent the notice of the occurrence of Uraster glacialis in Dalkey Sound (Zool. 3990), I have learned that it was obtained from a rock called the Corrig, off Dalkey Island, in from 8 to 10 fathoms water. For the notice of it, and of Muller's top-knot, I am indebted to D. J. Corigan, Esq., M.D., by whom they were both captured.—*J. R. Kinahan; July* 16, 1853.

Catalogue of the Land and Fresh-water Shells inhabiting the Neighbourhood of Dublin. By WILLIAM WHITE WALPOLE, Esq.

QUITE coinciding in the sentiments expressed by Mr. Taylor, in his Catalogue of the land and fresh-water shells of Aberdeenshire and Kincardineshire (Zool. 3878), as to the utility of such local lists, I beg to forward a list of those land and fresh-water Mollusca which I have found inhabiting the neighbourhood of Dublin.

It would, I doubt not, have been more perfect, had not the marine Conchology of our interesting island engaged most of my attention. I have heard of other species having been found near Dublin, but have included in my Catalogue none but those I have found myself, living in the various localities specified, which are mostly within eight miles South of our metropolis.

The nomenclature is according to Gray's edition of Turton's 'Manual of Land and Fresh-water Shells.'

Valvata piscinalis. Shangannagh river, near Killiney.

Arion ater. Common.

„ hortensis. Damp gardens at Monkstown.

Limax maximus. Common.

„ flavus. On walls near Booterstown and Blackrock.

„ carinatus. Damp gardens at Monkstown and Killiney.

„ agrestis. Common.

Helix aspersa. Common. A most curious elongated variety of this species was found near Killiney Castle.

„ hortensis. Very local in this neighbourhood; on brambles near Loughlinstown.

„ nemoralis. Common.

„ pulchella. Old walls near Loughlinstown, and in some like situations through this neighbourhood.

„ pulchella var. In a damp meadow near Killiney.

„ fusca. Little-river marsh, Killiney.

„ aculeata. Among dead leaves and moss near Loughlinstown.

„ hispida. Common.

„ „ var. *concinna*. Killiney, and other places through the neighbourhood.

„ rufescens. Common.

„ virgata. Very fine along the sea-coast; those found inland much smaller.

„ ericetorum. Local; not found at Killiney, but I have obtained it North of our capital, at Portmarnock and elsewhere.

Zonites rotundatus. Common.

„ „ var. *alba*. Killiney.

„ pygmæus. Little-river marsh, Killiney.

„ cellarius. Common.

„ purus. Rare, Killiney.

„ radiatulus. Rare; in a shady wood near Loughlinstown.

„ crystallinus. In a damp meadow near Killiney.

Succinea putris. Common.

„ Pfeifferi. Killiney.

Bulimus obscurus. Rare; on trees near Cherry-wood, and in an old wall near Loughlinstown.

„ acutus. Abundant along the sea-coast.

„ „ vars. *b*, *c*, and *d* of Turton found at Killiney.

Zua lubrica. In moss, Little-river marsh, Killiney, and elsewhere.

Pupa umbilicata. Common.

„ Anglica. Rare; Little-river marsh, Killiney, and Loughlinstown.

„ marginata. Rare; in an old wall near Loughlinstown.

Vertigo edentula. On the fronds of ferns in a shady situation, Killiney.

„ pygmæa. Rare; under limestone boulders, Loughlinstown.

„ substriata. Very rare; Little-river marsh, at the roots of rushes, &c.

„ palustris. Rare; same locality as the last species.

Balea perversa. Scarce; on beech-trees, Killiney.

Clausilia nigricans. Common.

Carychium minimum. Common in damp situations.

Limnæus pereger. Very common.

„ auricularius. Not common.

„ stagnalis. Pond at Portobello.

„ truncatulus. Rare; Killiney.

Amphiplea glutinosa. Rare; Loughlinstown.

Ancylus fluviatilis. Shangannagh river.

Physa fontinalis. In a stream at Fox-rock, and at Killiney.

Aplexus hypnorum. Loughlinstown, and Little-river marsh, Killiney.

Planorbis carinatus. Pond at Portobello, near Dublin.

„ marginatus. Loughlinstown.

„ contortus. Rare; Loughlinstown.

„ vortex. Common.

Cyclas cornea. Ponds at the Ballycorns lead-works.
„ lacustris. Same locality as the last, but rare.
Pisidium nitidum. Fox-rock, Killiney and Shangannagh.
„ pulchellum. Ponds at the Ballycorns lead-works.

WILLIAM WHITE WALPOLE.

Windsor Lodge, Monkstown,
Co. Dublin, July 8, 1853.

Note on Niphargus stygius, Schiödte, *and other Members of the Subterranean Fauna.* "Mr. Westwood, F.L.S., communicated a notice of the discovery in England of a new genus and species of Amphipodous Crustacea, the Niphargus stygius of Schiödte, an animal hitherto only found in the caverns of Adelsberg, celebrated as the locality of the Proteus anguinus. The Crustacean in question has been found in great numbers in a well near Maidenhead, the water of which was in consequence rendered unfit for use.* Mr. Westwood took occasion to remind the members of the opinion entertained by some naturalists of the existence of a distinct subterranean Fauna, of which the Proteus was an example: the members of which Fauna hitherto discovered were remarkable for their general want of colour, and for their being destitute of eyes,—two physiological conditions dependent on the dark and gloomy places where they have hitherto been found. Mr. Kirby, in his 'Bridgewater Treatise,' was one of those writers who contended that such animals formed no part of the Fauna now in existence on the surface of the earth, but belonged to a distinct subterranean race of animals. M. Schiödte, in a remarkable memoir recently published in the 'Transactions of the Danish Academy' (which Dr. Wallich has kindly translated for the Entomological Society of London, in whose Memoirs the translation has appeared), has described a number of singular animals belonging to the class of Annulosa, exhibiting all the characteristics of such a Fauna, being destitute of sight, and also almost or quite colourless. Amongst them are the Crustacean in question, a species of spider and false scorpion, a species of the family Poduridæ, and several Coleoptera, all of which were found in the caverns of Adelsberg in Carniola. Mr. Westwood also noticed that animals very closely related to those described by Schiödte had been found in the Great Mammoth Cave in Kentucky, including also a blind species of cray-fish, and one or more species of fishes destitute of eyes, at least wanting the transparent external cornea, although the optic nerve was present, which would probably allow a certain sensibility to the presence of light; and M. Schmidt had noticed that two newly discovered species of beetles, belonging to one of Schiödte's singular genera, although destitute of all external rudiments of eyes, had exhibited a sensibility to light by retreating under stones and towards the darker parts of the cavern when brought towards its entrance. A remarkable new genus of shrimps had also been recently described by Professor Bell in his work on the British Crustacea, dredged at a very great depth of the ocean, of which the eyes, although present, were destitute of the usual hexagonal facets."—*From the 'Proceedings of the Linnean Society,' April* 19, 1853, *p.* 218.

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* See also Proceedings of the Entomological Society, (Zool. 3923).

A Glance at the present state of our knowledge of the Coleophoræ.
By H. T. Stainton, Esq.

In the sciences of observation, it becomes absolutely necessary to collect together, from time to time, all recorded observations, so as readily to show the extent of our knowledge, and to indicate the particular points where further investigation is required.

Reaumur, who in 1737 wrote the Introduction to the Study of these insects, in the 4th, 5th and 6th Memoirs of his third volume, makes the following remark:—"Though pretty common, as I have just mentioned, I was for several years unable to find more than three or four a year. It is, however, not uncommon to meet with elms and oaks, on which, during the spring and summer, one can in a few hours collect them by hundreds, *when one has learnt to know them, and where to look for them.*"

The truth of this maxim is continually being confirmed by our own experience; and therefore, information which tends to show what to look for, and when and where to look, becomes an essential step in the progress of our acquaintance with these interesting insects.

The larvæ of the genus Coleophora all live in cases formed of the epidermis of leaves previously mined by them, or of silk; the larvæ feed on the parenchyma of leaves, attaching the case to the under side of a leaf, and mining between the cuticles. Some species feed on *seeds;* and to this latter habit I am particularly anxious to direct attention, as the seed-feeders are far more likely to escape observation, not betraying themselves by the discoloured blotches as the leaf-feeders do, and only therefore liable to be observed from the case protruding more or less from the seed-heads, seed-pods, or seeds which they are devouring.

I shall divide the species into British, and continental which have not yet been detected here; and shall further subdivide them as follows:—1. Those of which the transformations are ascertained. 2. Those of which the transformations are suspected, or, resting only on single observations, require further investigation. And 3. Those of which the preparatory states are not yet recorded as having been observed. I trust the day is not far distant, when the two last subdivisions will be merged into the first.

A. 1. British species of which the transformations are ascertained.

Alcyonipennella, vibicella, conspicuella, Pyrrhulipennella, Tiliella, palliatella, Currucipennella, discordella, Onosmella, Troglodytella, Inulæ, lineolea, argentula, Hemerobiella, Laricella, albitarsella, nigricella, fuscedinella, Lusciniæpennella, viminetella, solitariella, and lutarea.

Alcyonipennella. The larva is found in April and May, on Centaurea nigra. It is local, but widely dispersed. For figures of the larva, case, and discoloration of the leaf, see Ent. Trans. n. s. vol. ii. pl. 11, f. 2.

Vibicella. The larva is found in May and June, on Genista tinctoria. For description of the case and habits of the larva, see the note by Mr. Weaver in the 'Zoologist' (1845), p. 947. A figure of the case is given in Westwood's 'Introduction to the Modern Classification of Insects,' vol. ii. p. 405, No. 22.

Conspicuella. The larva feeds in May and June on Centaurea Scabiosa, (on the Continent on Centaurea Jacea; see Zeller, in Breslau Zeitschrift für Ent. 1850, Lepid. p. 31). Mr. S. Stevens has twice found the larva in the hilly field at Headley Lane: the perfect insect, as British, is still unique in Mr. Bedell's collection.

Pyrrhulipennella. The larva feeds in the autumn and spring on Calluna and Erica. I have found it at Dartford Heath, and Mr. Grant has found it at Wimbledon Common. For description of the larva and case see Linn. Ent. iv. 255.

Tiliella. The larva is polyphagous; I generally find it on sloe in May. Reaumur has given a long account of the mode in which this larva constructs its case of pure silk, in the 6th Memoir of his 3rd volume; and has figured the case in pl. 16, f. 1, 2, 3.

Palliatella. The larva of this is also polyphagous; Mr. Bond, some years back, obtained them plentifully from sallow. The case is the most singular yet observed in this genus, and is fully described by Reaumur in the 6th Memoir of his 3rd volume; he also figures it, pl. 16, figs. 6—12: (a copy of his f. 7 is given in Westwood's Introd. to the Mod. Classif. of Insects, ii. 405, No. 21).

Currucipennella. The larva feeds on oaks in May. Mr. Doubleday occasionally meets with it at Epping. Mr. Douglas bred a specimen in 1842, as recorded in the 'Entomologist' (385) under the name of ornatipennella. Reaumur was acquainted with this species, and has figured the case, pl. 16, f. 13, 14.

Discordella. The larvæ feed on Lotus corniculatus in May, and has been found in tolerable plenty by Mr. Shield, near Dublin.

Mr. Shield discovered the larva in the spring of 1852, and this year supplied me with 300 of them, of which, having reared a fair per-centage without obtaining a single specimen of Saturatella, I feel convinced that the latter is a distinct species.

Onosmella, so named by Brahm, because he found the larva upon Onosma echioides; here we find it in May and June on Echium vulgare, and Professor Zeller finds it at Glogau upon Anchusa officinalis. Tischer states (Treitschke, ix. 2, 219) that it feeds on Hieracium Pilosella, but in this I imagine there must be some error, arising either from his mistaking the young plant of one of the Boragineæ for a Hieracium, or from a full-fed larva having quitted its food-plant, and attached itself to Hieracium, or from the larva on Hieracium (at present we know of none on that plant) belonging to some other species.

Troglodytella. Under this name we have, not improbably, several species mixed. Zeller, in the 'Linnæa Entomologica,' gives Artemisia (vulgaris ?), on Herr Mann's authority, as the food of the larva of this species, and also observes that Senator v. Heyden found two cases, *probably* on Tanacetum vulgare, which produced var. *b*. In a letter however which I had from Professor Zeller in January last, he mentioned that Herr Schmidt, of Laybach, had sent him specimens of Troglodytella, with cases, which he had found abundantly on Eupatorium Cannabinum, but that these cases exactly resembled those which Herr Mann had found on Artemisia. In June, of this year, Mr. C. J. R. Jordan found at Teignmouth some larvæ of Coleophora feeding on Eupatorium, and also on Inula dysenterica; their cases were similar in form to those of C. Inulæ, but twice the size, and from them have been reared several specimens of an insect allied to Inulæ, but distinct. Mr. Weir, when at Pembury in June last, found the larvæ of Coleophora on Eupatorium, and also some on Inula; the cases were quite similar, but all small, the size of the ordinary cases of C. Inulæ. Mr. Weir imagined that he had here the larvæ of two species, but unfortunately he did not succeed in rearing any. Reaumur was acquainted with the larva of a Coleophora on the Eupatorium, of which he has figured the case, pl. 10, f. 1, 2, 3, and 6.

Inulæ. The larva in May and June on Inula dysenterica, growing in the shelter of hedges. Mr. Douglas has found this on the road from the Norwood Station to West Wickham Wood.

Lineolea. The larvæ feed in April and May on Ballota nigra and on Stachys sylvatica: on the former plant frequently abundant, on the latter more sparingly. Von Heyden's Stachydella (Linn. Ent. iv. 327) is certainly only this species.

Argentula. The larva feeds on the *seeds* of the yarrow (*Achillea Millefolium*) in September and October, not however changing to the pupa state till June: hence the insect is difficult to rear.

Hemerobiella. The larva feeds on fruit-trees in May: not uncommon in gardens at Hammersmith, Putney, &c. Fischer-von-Röslerstamm has figured the transformations of this species in his pl. 69.

Laricella. The larva in April and May on larches. The case and discoloration of the larch-leaves are figured by Hübner (Larvæ, vol. iii., Tineæ, vi., Alucitiformis, A. a.), and by Ratzeburg, (2 Theil, pl. 15, f. 3).

Albitarsella. The larva feeds on Glechoma hederacea during the winter and early spring months. According to Bruand it feeds also (*lividella*, Bru.) on Origanum. For figures of the larva, case, and discoloration of the leaf, see Ent. Trans. n. s. ii. pl. 11, f. 1.

Nigricella. The larva feeds, in May and June, on hawthorn, apple and pear: a case on the pear is figured by Reaumur, (pl. 7, f. 7, 8, 9). In many localities the species is excessively abundant on the hawthorn. This insect, or an unnamed species closely allied to it, also feeds on the birch.

Fuscedinella. The larva feeds in May and June on elm and alder. The case and mode of mining are figured by Reaumur (pl. 8, f. 1—11). Either this same species, or others very closely allied to it, feed on hornbeam and nut.

Lusciniæpennella. The larva feeds on roses in May. This had been observed by Reaumur (iii. 99, "C'est sur des rosiers," &c.), and a description of its transformations occurs in Bouché's 'Naturgeschichte der Insekten,' (p. 131, under the name of Gryphipennella). An account of the larva and case appears in Köllar's 'Insects injurious to Gardens,' (see Loudon's translation, p. 180), under the name of Rhodophagella.

Viminetella. The larva feeds on osiers and sallows in May. This species is first alluded to by Zeller in the Linn. Ent. iv. in a note at pp. 393, 394. The perfect insect closely resembles some of the other unicolorous species, but the larva-case is very different.

Solitariella. The larva in May and June on Stellaria holostea, and occasionally on S. uliginosa. For figures of the larva, case, and discoloration of the leaves, see Ent. Trans. n. s. ii. pl. 11, f. 3.

Lutarea. The larvæ abundant in May, on oaks. I have sometimes found it on birch. The case is figured by Reaumur, pl. 7, f. 1, 2, 3.

A. 2. British species of which the transformations are suspected, or, resting only on single observations, require further investigation.

Deauratella, paripennella, Wockeella, lixella, ochrea, cæspititiella, alticolella, lacunicolella, and badiipennella.

Deauratella. This insect was bred in 1850, by Mr. Gregson, of Liverpool, who wrote to me as follows:—"Mr. Allis and I took some by sweeping" at Bowness, early in June, "and I bred it amongst yellow clover which I brought home with me." I presume the "yellow clover" was Trifolium procumbens.

Paripennella. This was bred abundantly from cases found on an old fence at Kennington, by Mr. Thomson, in April and May. I have observed larvæ, in cases of similar construction, feeding in July, August and September, on sloe, nut, birch, bramble, &c.; but not having hitherto succeeded in persuading these larvæ to live through the winter, I have no certainty that they really belong to paripennella.

Wockeella. Mr. Weir has this year bred this species from a case he found at Pembury, in June, attached to a leaf of Genista tinctoria; he could not, however, observe that the plant had been anywhere eaten by it.

Lixella. Professor Zeller states that the larva feeds on the leaves of Holcus lanatus. Mr. Douglas found in April, this year, the larva of a Coleophora feeding on a smooth-leaved grass, in the hilly field at Headley Lane: the larva however unfortunately died.

Ochrea. Of the larva of this, Herr Mann writes to Professor Zeller, "the cases occurred in plenty, on dry, sunny slopes, on the capsules of a plant." He sent dried specimens of the plant to Professor Zeller, who found it to be Potentilla argentea. The cases should probably be looked for in autumn on the receptacles of this plant.

Cæspititiella, alticolella, lacunicolella. I have now bred the larvæ which feed from September to June on the seeds of the common rush, and they prove to be C. alticolella. Should cæspititiella and lacunicolella be distinct species, their larvæ may be expected to feed on other kinds of rush. Mr. Almond, of Birkenhead, found in May a case which would probably belong to some allied species. I do not however know on what plant it was found, further than that the Lancashire collectors call it "the star grass."

Badiipennella. I have bred this from a larva which fed on ash in May. The perfect insect appears very partial to elms, on which probably the larva also feeds. My case on ash, which was found by Mr. Preston in 1851, was smooth, and much smaller than a case of C. fuscedinella.

A. 3. British species of which we have no record of the preparatory states having been observed.

Spissicornis, Frischella, albicosta, Vulnerariæ, niveicostella, saturatella, therinella, murinipennella, annulatella,* juncicolella, orbitella and olivaceella.

Spissicornis. Mr. C. S. Gregson imagined that he had bred this in 1850, from Centaurea nigra, but the experience of subsequent years shows that it was really C. Alcyonipennella that he had bred. The perfect insect being so common in many places, it is strange that the larva has not ere this been detected.

Frischella. Mr. Curtis and Mr. Dale both represent the perfect insect as being partial to clover, hence probably the larva feeds on that plant.

Albicosta so continually occurs among furze, that I cannot but suspect the larva feeds on that plant.*

Vulnerariæ. The larva of this has not been detected; the heliciform case of the larva which Professor Zeller had observed on Anthyllis Vulneraria, and which he imagined probably belonged to this species, is the case of Psyche helicinella (see Ent. Trans. n. s i. 238).

Niveicostella. The perfect insect occurs at the end of June in the hilly field at Headley Lane, where much Hippocrepis comosa grows. Does the larva feed on that plant?

Saturatella. This being now certainly a good species, it is worth making some effort to find the larva. I have always found the perfect insect in the vicinity of broom.

Therinella, murinipennella, annulatella, juncicolella, orbitella,* and *olivaceella.* We have at present no clew to the larvæ of these species.

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* See Postscript, p. 4036.

Here I should mention some larvæ of Coleophora which have been observed in this country, but from which the perfect insects not having been reared, we are unaware to what species they should be referred.

1. A larva in a cylindrical case, feeding on the seeds of Atriplex* and Chenopodium in September and October. I have found this plentifully here, and sparingly in Sussex and Devonshire; Mr. Grant finds it at Putney, and Mr. Shield near Dublin. The larvæ continue in that state until the following June, hence the difficulty in rearing them. This species has been mentioned by Zeller in the Linn. Ent. iv. 354, as *perhaps* the larva of flavaginella. The cases on Atriplex did not escape the acute observation of Reaumur, who says "I have found a species attached to the seeds of the Atriplex," (iii. 121).
2. A larva feeding on elm in June and July, in a case much larger than that of fuscedinella. Mrs. Stainton found it at Sutton, June 23rd and July 6th. I have subsequently found it here, though by no means common. It is probably the larva of limosipennella.
3. A larva in a most singular case, on hawthorn and apple, in July and August. I first observed this last summer, but did not succeed in rearing the perfect insect. The case is generally formed of *an entire leaf*, but as the larva only inhabits a narrow cylindrical fold in the middle of it, the sides of the leaf project, and one side is generally more or less turned over; we thus see a withered brown leaf endowed with powers of locomotion, and becoming a true *folium ambulans.* I have doubted whether it could indeed be the case of a larva of this genus, but Professor Zeller, to whom I showed some when he was here last summer, was unable to imagine that it could belong to any other.
4. A larva feeding on birch, in autumn, in a case much like that of No. 2. I found this in Devonshire last September, and Mr. Wilkinson found it at West Wickham; all our larvæ died, and hence the name of the perfect insect has not been ascertained.
5. A larva feeding on meadow-sweet (*Spiræa Ulmaria*), found by Mr. Douglas at the beginning of July, in a case somewhat similar to that of fuscedinella.
6. A larva mentioned by Mr. Rennie in 'Insect Architecture' (p. 226), on stinging nettle? (*Urtica?*). "We have just discovered (Nov. 4, 1829) upon the nettle, a tent of a very singular appear-

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* See Postscript, p. 4036.

ance in consequence of the materials of which it is made. The caterpillar seems indeed to have proceeded exactly in the same manner as those which we have described; mining first between the two membranes of the leaf, and then uniting these and cutting out his tent. But the tent itself looks singular from being all over studded with the stinging bristles of the nettle, and forming a no less formidable coat of mail to the inhabitant, than the spiny hide of the hedgehog." From the use of the words "*stinging* bristles," I conclude a species of Urtica is here meant, otherwise I should have imagined the case alluded to was that of lineolea, on Stachys or Ballota.

B. 1. Continental species, which have not been detected here, of which the larvæ are known.

Onopordiella, Ballotella, Cœlebipennella, Astragalella, Coronillæ, serenella, Onobrychiella, auricella, Saponariella, Otitæ, Gnaphaliella, Millefolii, limosipennella, ochripennella, and Goniodoma auroguttella.

Onopordiella has been bred by Herr Mann, from larvæ found on Onopordon Acanthium, a not uncommon British thistle.

Ballotella. The larva in July and August, on Ballota nigra and Lamium purpureum, in cases similar to those of lineolea. Fischer-von-Röslerstamm has figured the transformations of the species, pl. 58. Bruand says that it also feeds on Teucrium Scorodonia.

Cœlebipunctella. The larva feeds on Artemisia campestris, in a case similar to that of Pyrrhulipennella.

Astragalella. "The larva feeds on Astragalus abundantly, but is difficult to rear; the male larva is rosy red, the female pale yellow."—Mann. Linn. Ent. iv. 244.

Coronillæ. The larva feeds on Coronilla varia.

Serenella. "Formerly the larvæ were very abundant in a garden at Vienna, on laburnum."—Mann, Linn. Ent. iv. 270.

Onobrychiella. "This species occurs in June and September, near Vienna, in dry places, where its food-plant, Onobrychis, grows. Several years back, they were bred plentifully." — Mann, Linn. Ent. iv. 272.

It seems impossible to imagine any species of Coleophora double-brooded, so that this species must keep out for a very long time, or the "June and September" must apply to two different species.

Auricella. The larva feeds on Stachys recta, (Linn. Ent. iv. 288).

According to Bruand (Cat. des Lépid. de Besançon) it is not rare on Teucrium Scorodonia.

Saponariella. The larva feeds on soap-wort (*Saponaria officinalis*) in the autumn, and again towards the end of spring. A circumstantial description of it is given by Heeger in the 'Isis,' 1848, p. 342.

Otitæ. The larva feeds on the lower leaves of Cucubalus Otites, (Silene Otites, *Babington*, p. 34) in the spring. Professor Zeller found in the autumn small cases on the *capsules* of this plant, which he imagines must be those of the young larvæ.

Gnaphalii. The larva feeds on the leaves of Gnaphalium arenarium, at the beginning of June.

Millefolii. The larva feeds on Achillea Millefolium, in May and June; the case somewhat resembles that of Onosmella, but has long white hairs. It is thus totally different from the case of argentula.

Limosipennella. The larva feeds in July, on elms, in a case much larger than that of fuscedinella. (As before mentioned, I have found larvæ which I imagine belong to this species).

Ochripennella. The larva feeds on Ballota nigra, in a case similar to that of C. lineolea, and at the same time, (May).

Goniodoma auroguttella. The larva feeds on the seeds of Atriplex in September, in a case shaped exactly like one of the seeds: when full-fed, the larva attaches its case to the stem of the plant, and, boring into it, remains there as larva the whole winter; in May it spins a cocoon, still inside the stem of the Atriplex, and changes to a pupa, leaving its three-cornered case attached to the outside of the stem, as if to attract the attention of the passers by. (See Fischer-von-Röslerstamm's account of its discovery, and his beautiful figures of this species, pl. 86 and 87).

B. 2. Continental species which have not been detected here, of which the transformations are suspected, or, resting only on single observations, require further investigation.

Colutella, ditella, vicinella, Ibipennella, albifuscella, flavaginella, directella and unipunctella.

Colutella. Zeller gives as a reference for this species Reaumur's pl. 11, f. 1—4, which represent the very curious case termed by Reaumur *à falbalas*, observed by him on the Astragalus in June. These furbelowed cases were of a dirty white. Fabricius, who described the species from an insect bred from a larva found on Colutea arborescens, gives the same reference to Reaumur. Further, the peculiar case figured by Reaumur does not belong to the larva of any species with which we are acquainted, unless indeed it be that of Astragalella, the form of which I do not find mentioned.

Ditella. "Discovered by Von Heyden, at Frankfort; the larva-cases are found on Artemisia campestris." — Zeller, Linn. Ent. iv. 248.

Vicinella. Herr Mann sent one specimen of this, and one of partitella, to Professor Zeller, with the information, "near Szexard, in Hungary, the larva-cases on Coronilla, from which the moths came out in July." — Linn. Ent. iv. 252. The cases resemble those of palliatella.

Ibipennella. The larva-case, exactly similar to that of Tiliella, was found on an oak-leaf at Frankfort.

Albifuscella. The larva-case was found by Senator von Heyden, in July, attached to the lower part of the *capsule* of Lychnis viscaria, *with only a small portion of the end projecting.* Reaumur has figured (pl. 8, f. 21—24) the case of a larva feeding on the leaves of a species of Lychnis.

Flavaginella. Madame Lienig found the larvæ on walls, fences, and trunks of birch-trees, from March to the end of June ('Isis,' 1846, p. 295). Zeller suspects that the larvæ which feed in autumn on the seeds of Chenopodium and Atriplex should be referred to this species.*

Directella. Dr. Wocke found about eighty cases of the larvæ on Artemisia vulgaris, on the 26th of May, 1848, after a thunder-shower. "The larvæ however did not take to the food offered them, and nearly all died; probably they had only crawled on to the Artemisia out of the wet. Only two of the perfect insects came out towards the middle of July." — Linn. Ent. iv. 368. The cases were cylindrical, clothed with thick, short, whitish-gray down. Mr. Douglas and myself have taken the perfect insect of a Coleophora among Artemisia, which may, perhaps, when we obtain bred specimens, prove to be this species: but hitherto we have found no larvæ on the Artemisia. A singular case, found by M. Bruand of Besançon on Artemisia, was forwarded by him to Mr. Doubleday this spring. The case is extraordinarily broad, and looks more like a withered bud; the larvæ crawled about without feeding, and finally attached themselves to the stem of the Artemisia, where they still remain, in all probability dead.

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* See Postscript, p. 4036.

Unipunctella. Herr Mann says of this, "the species flies near Vienna, in mountainous localities, in July and August, and its larva is abundant on Chenopodium, but generally dies in captivity during the winter."—Linn. Ent. iv. 306. The form of the case is not mentioned, nor whether it feeds on the seeds or the leaves of the Chenopodium.

B. 3. Continental species which have not been detected here, of which we have no record of the preparatory states having been observed.

Hieronella, cuprariella, fuscicornis, Vulpecula, binotatella, squalorella, ornatipennella, valesianella, vibicigerella, partitella, fuscociliella, trifariella, Oriolella, Gallipennella, bilineatella, stramentella, albicostella, virgatella, chalcogrammella, leucapennella, crepidinella, Fringillella, rectilineella, tractella, nubivagella, fretella, striolatella, derivatella, lineariella, præcursella, obtectella, versurella, Motacillella, punctipennella, granulatella, albicans, punctulatella, Binderella, lithargyrinella, deviella, and Milvipennis.

Here is indeed a wide field of research ! !

In conclusion, I wish to impress upon collectors the necessity of making themselves acquainted with the larvæ of this genus. The perfect insects never appear to fly of their own accord, and excepting in the instances of tree-feeding species, such as fuscedinella, lutarea, &c., which in windy weather may be observed flying back to the trees in little swarms, none of them are ever met with plentifully in the perfect state. When disturbed, they fly for a short distance, and then speedily settle : from their disinclination to fly, it is rare to meet with flying specimens in good condition, hence specimens taken on the wing are more or less wasted, and thereby become extremely difficult to name. This difficulty is increased by the great similarity of many species ; and those who wish to have their collections named, should breed their specimens.

There are one or two points in the natural history of the larvæ, which it would be desirable to clear up. Some of the larvæ make their cases of leaves, and some of silk ; but we cannot always speak confidently as to which species belong to each class. (C. Tiliella and palliatella have two of the most singular *silken* cases with which we are acquainted). Some of the larvæ have when young the case of a different form to that which they afterwards bear; thus the case of fuscedinella or of nigricella is curved when very young, the case of the adult larva being straight. In other species we *imagine* that the form of the case does not vary with the age of the larva.

All the species with which we are acquainted seem to pass the winter in the larva state; but there is this difference, that some are very small at the time of their hybernation, some are half grown, and some are full grown, and do not take any food subsequently. Fuscedinella and nigricella may be instanced as species which pass the winter in the very young state, in their curved cases: albitarsella, discordella, and viminetella may be mentioned as species which pass the winter when more fully grown, (indeed, last year I bred a specimen of viminetella in November, and though no doubt this was forced, I imagine it shows that some of these larvæ are completely fed up, and perhaps changed to the pupa before the winter sets in). The seed-feeding species, argentula, and that on the Atriplex, no doubt attain their full growth before hybernation. Of some of the species, the larvæ are found more freely in the autumn; and although it is not easy to keep them alive in-doors all the winter, it may be desirable to put the larvæ on convenient individual plants, leaving them to shift for themselves during the winter, and to collect them again in the spring. Last autumn I transplanted a number of larvæ of viminetella to some sallow bushes that were more convenietly situated for me, but unfortunately I quite forgot having made this preserve, until I found in July the empty cases and marks where the larvæ had been.

H. T. Stainton.

Mountsfield, Lewisham,
July 27, 1853.

P.S. — Since the above was written, Mr. Douglas and I have bred the Coleophora from the seeds of the Atriplex, (No. 1). Mr. Douglas's specimen appears to approximate to flavaginella, whereas mine appear to be annulatella. Mr. Boyd has this month found at Lyndhurst, the larva-case of a Coleophora on the *pods* of furze, (*Ulex*); this is probably that of albicosta.— H. T. S.

August, 16, 1853.

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Note on Lepidoptera bred from Larvæ. — I have lately bred the following insects from larvæ taken by myself last summer: —

Notodonta trepida, two, larvæ beaten off oak in July, Herts.
„ Chaonia, two, larvæ beaten from oak in July, Herts.
„ Dromedarius, three, from larvæ on birch in September, Derbyshire.
„ Dictæa, four, from larvæ on poplar, Herts and Derbyshire.
„ Ziczac, two, ditto.
Pterostoma palpina, three, from larvæ on poplar, Herts.
Ceropacha ridens, one, from a larva beaten off oak in July, Herts.
„ Or, one, ditto.
Dianthæcia carpophaga, five, from larvæ on seeds of Silene inflata, July and August, Herts, Bucks, and Derbyshire.
„ Cucubali, five, from larvæ on Silene inflata, July and August, Herts, Bucks.
„ capsincola, three, from larvæ on seeds of Lychnis dioica, August, Derbyshire.
Thyatira batis, two, from larvæ on raspberry, July, Herts.
Acronycta Ligustri, one, from a larva on ash, July, Herts.
Eurymene dolabraria, one, from a larva beaten off oak in July, Herts.

I have also bred, but unfortunately in too deformed a state to be of any use, Dianthæcia conspersa, from a larva found on seeds of Lychnis dioica in Derbyshire; and Platypteryx falcula from larvæ on birch, in September, in Derbyshire. — *H. Harpur Crewe; 17, Cavendish Road, St. John's Wood, June* 18, 1853.

Captures of Lepidoptera at Chorley. — I have lately taken four specimens of Dianthæcia? conspersa, three sitting on trees, the other on a Rhododendron; also Deilephila Elpenor, Hadena gemina, Cucullia umbratica, Abrostola triplasia, Plusia Festucæ, Iota, inscripta, and many other common Noctuæ. — *E. C. Buxton, jun.; Adlington Hall, Chorley, Lancashire, June,* 1853.

Additional Note on Ichneumon Atropos, Curt. — At a meeting of the Linnean Society on the 15th of February, 1853, there was read "an 'Additional Note' to Mr. Newport's Memoir on Ichneumon Atropos, *Curt.*, in reference to the changes which take place in the alimentary canal after the parasite has ceased to feed, and while assuming its imago state. These changes, which are very considerable both as regards form and condition, are minutely described; and every part of the canal is shown to be supplied with tracheæ, the trunks of which, one in each segment, passing transversely inwards, divide into branches, which, again subdivided, penetrate into and ramify through the structure. These, like all other tracheæ, are formed, as described by Sprengel, of three tissues, an external *membranous* and an internal *mucous*, inclosing between them a strong spiral fibre. The nature and origin of the external tissue have been shown by Mr. Newport in previous memoirs; but he has since found that the ramifications of the tracheæ which penetrate the structure of the canal, or of any other organ, become denuded of this external covering, and then seem to be formed only of two tissues, the spiral and the mucous, if indeed there be not also, as he has some reason to think, an extremely delicate serous, or basement membrane, closely adherent to and uniting the coils of fibrous tissue on its external surface. The *ultimate divisions* of the tracheæ are always distributed separately, and *do not anastomose*, ending, as noticed by Mr. Bowerbank, in extremely minute, filiform, blind extremities; and this Mr. Newport finds to be their condition in all structures, in the nervous

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and tegumentary, equally as in the glandular and muscular. These facts, the author observes, may perhaps assist us to understand the nature of the injection of the tracheæ by M. Blanchard, and also the mode of nutrition in insects; the ultimate branches of tracheæ in the tissues of the alimentary canal operating, possibly, as absorbent structures, and inducing the chylific fluid elaborated around them to flow, in its transit outwards, along the channels formed by their loose peritoneal covering into the regular circulatory currents. Further, they may assist to explain the mode of coloration of the tracheæ in the experiments of MM. Alessandrini and Bassi, and of M. Blanchard, and also in others, yet unpublished, made by himself on the larvæ of Clissocampa Neustria, in July, 1837."—*From the 'Proceedings of the Linnean Society,'* 213.

Note on the Ocelli in the Genus Anthophorabia, Newp.—At a meeting of the Linnean Society on the 19th of April, 1853, Mr. Newport "remarked that since the publication of his observations on these insects in the 'Transactions' of the Society, his attention had again been directed to the peculiarities of the organs of vision in the male sex. He had already shown that these individuals possess only ocelli at the sides of the head as well as on the vertex, but that these structures exist at precisely the same parts of the head as the ocelli and the compound eyes in the female, and consequently that there can be no doubt of their homology. These appearances, however, having led some to question the correctness of this, it became necessary, in order to judge aright of their nature, to consider what are the essential conditions of a structure which is specially destined *for the appreciation of light*. This consists, as already pointed out in fishes, of a follicle or pit in the tegument of the head, coated with dark pigment, and receiving the distal termination of a particular cerebral nerve, conditions which are precisely those of the ocelli, both of the sides of the head and of the vertex, in Anthophorabia. The various modifications of the eye in insects, with regard to the form of the cornea, the depth of the chamber, and the presence of the choroid, and of the lens, with reference to the extent of field, and the focal distance, of vision, were pointed out, and the degree in which they exist in Anthophorabia mentioned, as coinciding with the peculiar habits of the insect. The structures in the male were thus shown, by the presence of cornea, chamber, choroid, and nerve, to be most indisputably organs of sight. The author referred also to the binary origin of the nerve of the middle ocellus of the vertex, as formerly pointed out by him in his paper on Pteronarcys; to the origin of ocelli in the same way as other dermal tubercles; and to the imperfect eye-spots in the Scorpionidæ being supplied with nervous filaments from the same optic nerve which supplies the recognized organs of vision in those animals."—*From the 'Proceedings of the Linnean Society,' p.* 219.

Capture in the North of England of six Species of Coleoptera new to the British Fauna.—Having some few Coleoptera, principally small species, which I was unable satisfactorily to name, I availed myself of M. Javet's kindness, and sent them to Paris for examination. By his and Dr. Aubé's courtesy, I am enabled to record the following, which have not, in so far as I am aware, hitherto been taken in Great Britain:—

Oxypoda maura, *Erichs.* A pair taken on the herbage of a pond at Gosforth, May.
Ephistemus globosus, *Waltl.*, *Erichs.* One on a hot-bed at Long Benton, June.
Cryptophagus badius, *Sturm.* Newcastle.
„ acutangulus, *Gyll.* Newcastle.
„ dentatus, *Herbst.* By sweeping herbage, Gosforth, June.
„ subdepressum, *Gyll.* Newcastle.

—*Thos. John Bold; Angas' Court, Bigg Market, Newcastle-on-Tyne, August* 19, 1853.

NOTICES OF NEW BOOKS.

'The Annals and Magazine of Natural History,' Nos. 66—68, *dated June, July, and August,* 1853.

No. 66 contains the following papers : —

'Description of Orbitolites Malabarica (H. J. C.), illustrative of the Spiral and not Concentric Arrangement of Chambers in D'Orbigny's Order Cyclostègues.' By H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment.

'Remarks upon British Plants.' By Charles C. Babington, M.A., F.R.S., F.L.S., &c.

'Further Observations on the Animal of Diplommatina, (including a Note by Capt. T. Hutton).' By W. H. Benson, Esq.

'On the Genera of the Tribe Duboisieæ.' By John Miers, Esq., F.R.S., F.L.S.

'Notes on some British Zoophytes.' By Wyville Thomson, F.R.P.S. &c., Lecturer on Botany, Univ. and Marischal College, Aberdeen.

'Observations on Relative Position ; including a new Arrangement of Phanerogamous Plants.' By B. Clarke, F.L.S. &c.

'On some points relating to the Structure and Mechanism of the Wolf-fish, (*Anarrhichas Lupus*).' By Edwards Crisp, M.D.

Proceedings of Learned Societies : — Zoological Society—Botanical Society of Edinburgh —Entomological Society.

Miscellaneous : — On the Reproduction of Frogs and Toads without the intermediate stage of Tadpole ; by the Rev. L. Jenyns. Researches on the Fecundation and Formation of the Embryo in the Hepaticæ and Ferns; by H. Philibert. Mode of determining the Optical Power of a Microscope ; by Prof. Harting, of Utrecht. Marine Vivaria ; by William Thompson. Labidocera magna; by J. Lubbock. Observations on the Anatomy of the Antennæ in a small Species of Crustacean ; by John D. M'Donald, M.D., Assistant Surgeon to H.M.S.V. Torch. Meteorological Observations.

Mr. Wyville Thomson describes Reticularia immersa, a new genus and species of British zoophytes allied to the Sertulariadæ, which "differs from Coppinia and approaches the other Sertularians in having its polyp-cells springing from a common horny tube." Found at Newhaven ("usually investing Sertularia abietina") and Aberdeen.

In the letter 'On the Reproduction of Frogs and Toads without the intermediate stage of Tadpole,' the Rev. L. Jenyns refers to his

'Observations in Natural History,' wherein he has "recorded the circumstance of toads inhabiting the cellars at Bottisham Hall," whence there is no escape, where "they may often be noticed in the spring *in copulâ*, and where" he says, "I have also seen young toads, though I never noticed any spawn-deposits." He also refers to his 'Manual of British Vertebrate Animals,' wherein he alludes to the circumstance of the common newt or eft being found on land, of all sizes, but ever in a perfect state, as observed by Sheppard and Shaw. At one time, Mr. Jenyns could not account for their occurrence, otherwise than on the supposition that the efts had been bred in "the merest puddles caused by rains, which soon drying up, obliged them to exchange their native element as larvæ for another, before they would have ordinarily attained the perfect form; and that this led to the gills being cast prematurely to enable the animal to accommodate itself to its new circumstances:" now, however, he thinks it more probable, "after what Mr. Lowe has stated in the case of frogs and toads, that these individuals may have been *born on land in the state in which they are found*, and that in fact gills never existed, or disappeared almost immediately after birth."

No. 67 contains the following papers:—

'Remarks on some Algæ belonging to the Genus Caulerpa.' By R. K. Greville, LL.D., &c.

'On the Genus Truncatella.' By William Clark, Esq.

'On the Operculum of the Genus Diplommatina.' By Dr. J. E. Gray, F.R.S., V.P.Z.S., &c.

'Description of a new Species of Rhododendron from Bootan, in India.' By Thomas Nuttall, Esq.

'On Relative Position; including a new Arrangement of Phanerogamous Plants:—Part IV. On Dorsal Placentation.' By B. Clarke, F.L.S., &c.

'On the Phosphorescence of some Marine Invertebrata.' By M. A. De Quatrefages.

'On the Structure of the Leaves of Palms.' By M. A. Trécul.

Proceedings of Learned Societies:—Linnean Society—Zoological Society—Botanical Society of Edinburgh.

Miscellaneous:—On the Fecundation of the Fucaceæ; by M. Gustave Thuret. Time of Spawning of British Crustacea; by William Thompson. Experimental Researches on Vegetation; by M. Georges Ville. On the Priority of the Discovery of the Mode of Action of the Pholades in the Perforation of Stones; by M. Vrolik. On Sun

Columns observed at Sandwick Manse, Orkney; by the Rev. C. Clouston. Meteorological Observations.

Professor Vrolik, of Amsterdam, states in the 'Comptes Rendus' for May 2, 1853, that the perforation of stones by the mechanical action of the shells of Pholades, without the aid of an acid, was described more than seventy years ago by Léendert Bomme, a Director of the Commercial Company of Middlebourg, in a memoir published in the 'Transactions of the Scientific Society of Flessingen.'

The papers in No. 68 are intituled: —

'On the Genus Cercyon, with a short Monographical Synopsis of the British Sphæridiidæ.' By Andrew Murray, W.S. Edinburgh.

'Characters of New Land Shells, collected by Edgar L. Layard, Esq., in Ceylon.' By W. H. Benson, Esq.

'Notes on the Ornithology of Ceylon, collected during an Eight Years' Residence in the Island.' By Edgar Leopold Layard, C.C.S.

'On the Rissoa rubra.' By William Clark, Esq.

'Description of several new Species of British Crustacea.' By William Thompson, Esq.

'On two new Species of Calanidæ, with Observations on the Spermatic Tubes of Pontella, Diaptomus, &c.' By John Lubbock, Esq., F.Z.S.

'Notes on some new or little-known Marine Animals.' By P. H. Gosse, A.L.S.

'On the Teeth of the Genus Mitra, *Lamarck*.' By J. E. Gray, Ph.D., F.R.S., V.P.Z.S., &c.

Bibliographical Notices: — 'Système Silurien du Centre de la Bohême. 1ère partie, Recherches Paléontologiques. Trilobites,' par J. Barrande. 'Popular Physical Geology.' By J. B. Jukes, F.R.S.

Proceedings of Learned Societies: — Royal Institution—Zoological Society.

Miscellaneous: — Observations on the Breeding of the Nightingale in Captivity; by H. Hanley. Eucratea chelata; by William F. Templer. On a new Species of Bulimus; by Lovell Reeve, F.L.S. Johnstonella Catharina, *Gosse*; by J. E. Gray, F.R.S., &c. On a new Genus of Anomiadæ; by J. E. Gray, F.R.S., &c. Meteorological Observations.

In his paper on the Rissoa, Mr. Clark proposes to constitute a new genus — Barleea — for the reception of the R. rubra of authors, living specimens of that animal, sent to him from Penzance by Mr. Barlee, being found to differ greatly from the published descriptions.

The new species of Crustacea described by Mr. Thompson are the following: — Hippolyte Whitei, H. Yarrellii, H. Grayana, and H. Mitchelli; all from Weymouth Bay.

Mr. Gosse describes the following new and rare marine animals: — Sipunculus punctatissimus, from Weymouth; Spadix purpurea, Lulworth and Weymouth; Actinia miniata; Act. clavata, *Thompson*, var. *rosea*; and Iluanthos Mitchellii.

Proceedings of the Entomological Society.

August 1, 1853.—Samuel Stevens, Esq., F.L.S., in the chair.

The following donations were announced, and thanks ordered to be given to the donors: — The 'Zoologist' for August; by the Editor. The 'Athenæum' for July; by the Editor. The 'Literary Gazette' for July; by the Editor. The 'Journal of the Society of Arts' for July; by the Editor. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' Nos. 3 and 4, 1851, No. 1, 1852: 'Die Coleopterologischen Verhaeltnisse und Käfer Russlands,' von Victor v. Motschulsky: both by the Soc. Imp. Nat. Moscou. 'Bericht über die wissenchaftlichen Leistungen im Gebiete der Entomologie wahrend des Jahres 1851,' von Dr. H. Schaum; Berlin, 1853: by the Author. 'Catalogue of the Coleoptera of Scotland,' by Andrew Murray; Edinburgh, 1853: by the Author. 'Abhandlungen der Mathemat.-Physikal. Classe der Koeniglich Bayerischen Akademie der Wissenchaften,' 17 Band, 1st abth., Munchen, 1853: Bulletin ditto, No. 25: 'Ueber den Chemismus der Vegetation,' von Dr. A. Vogel jun., Munchen, 1853: all by the Akademie. 'Transactions of the Linnean Society,' Vol. xxi. part 2, 1853: 'Proceedings of the Linnean Society,' Nos. 48—51: 'List of the Linnean Society;' all by the Society. 'Proceedings of the Royal Society,' Vol. vi. No. 97; by the Society. Two specimens of Boletophagus crenatus; by Mr. Foxcroft.

Viscount Goderich, M.P.; Captain Cox, Queen's Body Guard; and Henry Evans, Esq., Darley Abbey, near Derby, were balloted for and elected Members of the Society.

Mr. Stevens exhibited a female of the rare Pachetra leucophæa? taken flying at Mickleham, in July; and an almost black variety of Hadena dentina, from the same place.

Mr. Wilkinson exhibited living larvæ of Incurvaria masculella in their cases, feeding upon leaves of beech and hornbeam externally, having in a young state fed within the cuticles, of which the cases were formed.

Mr. Smith exhibited a very large Boletus, found by Mr. Foxcroft on an old birch-tree in the Black Forest, Rannoch, from which he had extracted Boletophagus crenatus. He also exhibited a large quantity of Mr. Foxcroft's captures of Coleoptera, Lepidoptera, and Hymenoptera in Perthshire, including many rare species, and among the Coleoptera, Noctiluca splendidula? a new British species.

Mr. Douglas exhibited Ino Globulariæ, taken at Cheltenham in July, being a new locality for this species; also Heliothis marginata, and twelve other species of Noctuidæ captured at the same time and place, flying at dusk about the flowers of Silene inflata.

Mr. Bond exhibited some leaves of parsnep from Cambridgeshire, affected with the same disease as the potatoes, which the growers think is caused by insects. He however had only found on them a few minute Aphides, Psoci, &c., which he now handed to Mr. Westwood for examination.

Mr. Edwin Shepherd exhibited a remarkable variety of Anticlea rubidata, in which the ordinary broad band on the fore-wings had been converted into a narrow fascia.

Mr. Stainton exhibited an insect, captured by Mr. Boyd in the New Forest, closely resembling a Lepidopterous Nepticula or Elachista in its size, brilliancy, colour, and marking, but which was in reality Trichopterous, and probably of a new genus.

Mr. Westwood exhibited a new entomological product from the interior of Tropical Africa, near the Bight of Benin, consisting of a mass of the cocoons of one of the Lepidoptera, probably allied to Galleria, which was found loosely attached to trees. It formed a spongy-looking silky body, which, from the agglomeration of the multitude of cocoons, could not be wound off like ordinary silk, but had to be carded, like wool. He also exhibited the material as it appeared in two subsequent stages of manufacture, in which it resembled floss silk; from this it was spun into threads, and woven into articles of different kinds, which had a strong and cotton-like texture. This substance would probably be turned to account, for several silk-manufacturers had seen it, and thought it might prove a desirable addition to our materials for textile fabrics. He also exhibited some dyed silk from the same country, which he thought was the product of another insect.

Mr. Westwood read from the 'Gardeners' Chronicle' a recommendation of chloroform as an agent for stupefying bees, when such a proceeding, for the purpose of taking honey, or from any other cause, was necessary in the apiary, in preference to sulphur or fungus.

Mr. Westwood then read from the Boston (U. S.) 'New England Farmer' of July 2nd, the following account, headed "A new Enemy in the Field;" stating that Dr. Harris had not noticed this caterpillar in his writings on injurious insects: —

"Within the past three days, we have noticed on our apple-trees a small worm, which threatens destruction to our most valuable crop. His manner and size are much after the style of the canker-worm, but his personal appearance is different. Like the canker-worm, he devours the leaf all but the tough fibres, and if you suddenly shake the tree, spins down on his thread like a spider, and he leaves the tree looking as if seared by fire."

"The canker-worm, if I recollect aright, when he visited New Hampshire twenty years ago, was always of a dark colour, and moved soberly *by measure*, while these creatures are of all colours, black, brown, green and striped, and they slip off your hand with a sort of *waltzing* step, in a second."

"I have travelled from Chester, through Raymond and other towns, home today, and have observed them all along. They are abundant, not only on the apple-tree, but on the plum, and on the white and red oak. The peach, which promises a great crop this season, seems to be free from them. Probably Professor Harris can tell us all about the animal in a moment."

"H. F. FRENCH."

"Exeter, N. H., June 20, 1853."

Another communication was as follows: —

"In our vicinity an enemy has appeared upon our fruit-trees, the apple and the cherry, which threatens to destroy our entire crop. So far as I can learn, the foe is a stranger to our fruit-growers; it is spread upon all parts of the tree, and, when it is shaken, drops from it suspended by a web, then winds up its web, and again gains its position on the tree. The trees, when badly eaten, present a dry and sere appearance. In all these points it is like the canker-worm, as it is also in size, and to a casual observer it would be pronounced their work; but in many respects it is dissimilar. The canker-worm is brown, this is nearly white, with two longitudinal stripes running its whole length; the canker-worm is slow of motion, this is very quick, and moves rapidly from place to place in all directions, to escape an enemy; the canker-worm moves forward by doubling or opening and throwing forward its head and fore part, this is provided with 16 legs,—6 near the head, 8 near the middle, and 2 at the tail, and uses them with great celerity in running. The canker-worm has no shelter upon the tree, but lies out upon the leaf or branch; this forms itself a house by webbing the corner of a leaf, into which it retreats on the first appearance of danger: the canker-worm rarely eats the fruit, if it can get leaves; this is now eating into and spoiling and disfiguring the fruit. Of the insect which produces them I know nothing. My neighbours say that about three or four weeks since they noticed an abundance of small millers, of an ash colour, and they may have proceeded from them. If the insect, with its habits, are unknown, we have before us a work of careful observation, as the first descent of these depredators threatens more injury to our fruit than any other insect which has attacked our trees. If there are not enough to spoil my trees and fruit entirely now, I am sure that double the present number on those of my trees most eaten, would not leave me an apple or a leaf remaining.

"R. C. Stone."

"Sherburne, June 21, 1853."

The Editor adds: — "Shaking the trees pretty freely dislodges them. We advise this practice, and also syringing the young tree well with whale-oil-soap, strong soap-suds, or even clear water. We understand that muriate of lime will destroy them, by sprinkling the ground with it, and shaking the worms down upon it."

Mr. Wollaston communicated an extract of a letter from Dr. Schaum, informing him of the death of Dr. Germar on the 8th of July, from an attack of gout, at the age of 66.

Mr. Smith read some "Observations on the Economy of Pompilus punctum," showing that P. petiolatus, *Vander Linden*, is the female of that species, which fact he had ascertained by breeding both from one set of cells, found by the Rev. W. Delmar, at Elmstone Rectory, near Canterbury, and communicated to him by Mr. W. Thomson, Director of the Natural-History Department at the Crystal Palace.

Mr. Douglas read the following extract from Layard's 'Discoveries in the Ruins of Nineveh and Babylon,' 1853, page 338.

"*Ruins at Konyunjik.* — The walls were panelled with sculptured slabs about six feet high. Those to the right in descending represented a procession of servants carrying fruit, flowers, gum, and supplies for a banquet, preceded by mace-bearers. The attendants who followed carried clusters of ripe dates, and flat baskets of osier-work filled with pomegranates, apples, and bunches of grapes. They raised in one hand small green boughs to drive away the flies. Then came men bearing hares, partridges, and dried locusts fastened on rods. The locust has ever been an article of food in the East, and is still sold in the markets of many towns in Arabia. Being introduced in this bas-relief amongst the choice delicacies of a banquet, it was probably highly prized by the Assyrians."

Mr. Douglas also read the following translation from the 'Entomologische Zeitung' for April, of a "Report by Professors Goeppert and Cohn, of a Lecture by Professor von Siebold on Strepsiptera, at a meeting of the Silesian 'Gesellschaft für vaterl. Cultur,' at Breslau, on the 9th of February."

"The Strepsiptera form such a remarkable and isolated group of insects, that the oldest French and English entomologists, who were the first to draw the attention of the naturalist to these exceedingly rare insect-parasites, raised them into a distinct Order. In Germany they remained almost entirely unnoticed; indeed, the ignorance of this interesting group was so great, that up to a very late period no account of it exists in any German zoological hand-book. The lecturer, at different times, in journals and papers of scientific Natural-History Societies, has published his observations upon the very singular organization of the Strepsiptera, so different from that of all other insects, and upon the history of their wonderful propagation, without having had here in Germany these communications completed or extended by others; whilst in England, they appear to be peculiarly fortunate in discovering and observing these insects. Through the researches of English entomologists, we know up to this time 14 species of Strepsiptera, in 5 genera; among which are 11 European species. In order not to repeat what the lecturer published on the Strepsiptera some years since, he referred to the last paper on the subject in the 'Proceedings of the Naturforschenden Gesellschaft of Danzig,' Bd. iii. Heft 2, 1839; later in the 'Entomol. Zeitung,' 1843, p. 113, and in Wiegman's 'Archivs für Naturgeschicte,' 1843, Bd. i. p. 137. Herr von Siebold has continued, in Freiburg, the investigations into the Strepsiptera which he had commenced in Danzig and Erlangen, where it was easy for him to procure his materials: here in Breslau he laboured in vain to obtain Strepsiptera; and none of the many able Silesian entomologists could give him an idea where and how to procure these insects. Herr von Siebold hopes therefore, after his approaching return to South Germany, again to renew his researches, and to be able to complete his Monograph of the Strepsiptera. The reason why he now speaks about them is, that in the last 'Catalogus Coleopterorum Europæ,' published by the Entomological Society of Stettin, the Strepsiptera are presented as a family of beetles, under the name of 'Stylopites.' The Strepsiptera have had the fate to see themselves classified in all the hitherto known Orders of insects, by those entomologists who would not acknowledge them to be a distinct Order. The first proposition to bring the Strepsiptera among the Coleoptera, was put forth by Burmeister (in his 'Handbuch der Naturgeschichte,' 1837, p. 643), without giving any further reason for his supposition that they should occupy their natural position among the family Mordellidæ: he was merely led thereto by the idea that the larvæ of Strepsiptera are parasites on bees, and the larvæ of Symbius and Rhipiphorus, belonging to the Mordellidæ, also live as parasites, the former on Blatta, the latter on Vespa. This view of Burmeister has recently been supported in England, by Newman ('Zoologist,' 1850, p. 2684), who endeavours to prove that the Strepsiptera are genuine Coleoptera. We find the grounds of his arguments stated in extracts in the entomological 'Jahrsbericht' of Wiegman's 'Archivs,' (1851, Bd. ii. p. 200). Herr v. Siebold is not convinced by the reasons given, that the Strepsiptera are beetles. The resemblance of the larvæ of Strepsiptera to those of Meloë is referred to, but that is only very superficial; the latter have the parts of the mouth distinctly developed, in the former they are entirely wanting. In both sexes of beetles the parts of the mouth are always developed into very perfect biting organs; in the male of the perfected Strepsiptera they are reduced to two rudimentary jaws, and in the female they are entirely absent. The prothorax in all beetles is seen very strongly developed, and the upper part forms a large surface, furnished with many characters indicative of genera and species; while, in the Strepsiptera, this upper side of the prothorax has almost entirely vanished. The reduced and somewhat spirally twisted fore wings of the Strepsiptera are very movable appendages, and occupy the position of anterior halteres (Schwingkolben), corresponding to the hinder halteres of the Diptera; in beetles, the fore wings are simply coverings for the hind wings, and in flight are merely lifted up and held immovable, whether they are diminutive or not. All the male Strepsiptera want the claws of the last joint of the tarsi, an apparatus so necessary for Coleoptera, which use their legs in running, climbing, and clinging, that all species are provided therewith; moreover, they live for months, and even years, after they have thrown off their pupa-covering, whereas the male Strepsiptera, from the moment they emerge from the pupa, flutter incessantly, and do not live longer than a day. Though Herr v. Siebold is now convinced that the Strepsiptera are not Coleoptera, he still thinks that the attempt made by entomologists to place them in that position, must be borne with, and even received with welcome, as it has very good practical advantages, from which science may very shortly derive benefit. Hitherto, the entire group of Strepsiptera has been neglected in an unprecedented manner by German entomologists, but now, since Coleopterists find the Strepsiptera incorporated into the Catalogue of Coleoptera, they will be induced to adorn their collections with these pretty little creatures. They will now pay attention to these insects, will capture and pin them, and so must study the circumstances of their existence; they will be compelled to observe them, and the insects in which they live, with the greatest attention, for this is absolutely necessary, if they wish to possess winged Stylopidæ. In this way, observations and communications respecting these hitherto little known creatures will be amassed, from which hereafter the scientific position of these insects will stand out with greater certainty. As the lecturer has already been called upon by several Coleopterologists to indicate some means by which these Strepsiptera may be procured, he thinks it right to recommend the following method of rearing them, which has even now proved to be very useful; as it is only by breeding that one can obtain possession of the winged males, for, on account of their smallness, tenderness, and short, hidden life, they can only very rarely and casually be taken at large. In the first place, a spacious, light, and airy cage or apartment (Zwinger) must be prepared, in which flowering Umbelliferæ (which are eagerly sought by Hymenoptera) may be placed, and kept fresh by water in glasses; then, nothing must be thought of the trouble of catching the Apidæ and Andrenidæ which frequent the flowers of the sallows, and examining whether they are Stylopized or not, and then carefully placing in the aforesaid cage those which are Stylopized, which may easily be distinguished from those that are not Stylopized. One proceeds in the same manner with the Stylopized

Vespidæ (Polistes gallica) and Sphegidæ (Ammophila sabulosa), which are found abundantly on Umbelliferæ. These insects, although as captives they at first miss their usual employment and care for their brood, live in their cage for several weeks, especially if they are from time to time supplied with fresh flowers of Umbelliferæ spread over with pounded sugar. Being accustomed to work, they are thus provided with employment; they busy themselves on the flowers, and lick up the sugar, and their life is prolonged as long as possible, so that the pupæ of the Stylopidæ contained in their bodies obtain time to develope, and (in the case of the males) emerge as winged insects. The Stylopized Hymenoptera are known in the following manner: — The larvæ of Strepsiptera living as Entozoa in the cavity of the hinder part of the body of Hymenoptera, eventually, when about to assume the pupa-state, with the fore part of the body pierce through the soft portion between the hinder segments of the body of their foster-parent, where they continue to remain, so that the ever wingless and footless females end their lives there; the males, after a time, thrust the prominent forepart of their pupa-case out of the hinder part of the body of their foster-parents, and flutter out of their confinement. The Hymenoptera which are burdened with male pupæ, are known by the dark brown conical fore ends of the pupa-cases projecting between the segments of the bodies of the bees and wasps; the female Strepsiptera are distinguished by the light brown scale-formed projecting fore part of the body, which remains unchangeably fixed, whilst the conical fore part (cephalothorax) of the male pupa breaks off upon the exclusion of the perfect insect."

Herr Schiödte, of Copenhagen, who was present as a visitor, made a few remarks in favour of the proposition that the Strepsiptera should be associated with the Coleoptera; observing that the characters of the latter Order are possessed generally by the Strepsiptera, though some are in a rudimentary state only, laying stress upon the form of the mouth and the metamorphosis, as more essential characters of the Coleoptera than the large prothorax; and arguing that in such a matter as the position of the Strepsiptera, the most essential characters of all the Orders, and not the minute detail, should be considered and compared: from which he was led to believe that the Strepsiptera, though apparently in some respects anomalous, were more nearly related to the Coleoptera than to any other Order; and that the opponents of this view should show that any of the characters of the Coleoptera are not represented in the Strepsiptera.

Mr. Waterhouse briefly opposed the junction of the Strepsiptera with the Coleoptera, confining himself chiefly to the different development of the prothorax in each Order, the form of which he considered very characteristic of different groups.

Mr. Westwood also made some similar observations: and argued that the Strepsiptera were more nearly allied to the coarctate Diptera.—*J. W. D.*

Anecdote of the Oared Shrew (Sorex remifer).—Walking in my garden a few days ago, I heard a faint, plaintive, wailing noise proceeding from a grass walk on the side of my orchard. Directing my attention to the spot, I saw a shrew, which, from its size, I at once knew to be the oared shrew (*Sorex remifer*), pulling at the hind leg of a large frog. Froggy evidently did not at all like his position, and what the issue would have been I can hardly conjecture, had not the shrew chanced to see me, which

caused him at once to quit his hold of his prey. The poor frog, "nothing loath," then made a spring into the nearest strawberry-bed, while mousey retreated into the orchard. I waited some time without stirring, in the hope that, like the weasel, the shrew might have again returned to the charge, as I felt interested in the manœuvres of a contest hitherto new to me; but I was disappointed: — I saw my black friend presently make a detour into some thick grass, evidently bent upon retreat. Any facts tending to throw light upon the carnivorous propensities of our insectivorous group of mammals is interesting, and therefore I record the above otherwise trifling incident. There is nothing in their dentition sufficiently distinct to separate them from the Carnivora, as any one may satisfy himself by examining the tripartite wedge-like molars, and the recurved sharp canines of the common mole. I believe that the acquiescence of naturalists in the opinion that the hedgehog, shrew, and mole feed exclusively on insects, has alone kept up the generic distinction of the two groups. If your readers will be kind enough to record every instance in which any of the above (so-called) purely insectivorous quadrupeds are known to feed upon animals higher in the scale than insects, they will do something towards the union of two orders, at present perhaps artificially divided. I do not remember seeing Sorex remifer before in my ground; S. araneus is common enough.—*C. R. Bree; Stowmarket, August*, 1853.

Occurrence of Limax Gagates near Tenby, S. Wales. — Only one instance of the occurrence of this slug has, as I believe, hitherto been recorded as a denizen of Great Britain, namely, that found by Mr. Derbyshire in the Isle of Portland: it is with much pleasure therefore that I have to record the capture of a second specimen, taken by myself in South Wales. Late in the evening of the 22nd of last month, I was strolling along the old Carmarthen road from Tenby, about a mile from the latter place, when I discovered my slimy friend taking his evening's airing on the damp hedgebank. The following is a description of him: — *Specific character:* back carinated throughout; shield granulated, olivaceous black, with paler sides. *Head* bluish; tentacles darker, particularly the superior, which are deep violet. *Shield* ample, squarish, bilobed behind (being indented by the keel in the centre), granulated, same colour as the rest of the body. *General colour* very deep olive, or olivaceous black, becoming lighter at the sides, so that the *margin of the foot* is very pale, except near the tail, where it is darker; sole nearly white. *Keel* extending the whole length of the back, sharply edged; the edge somewhat darker than the rest of the body. *Mucus* colourless, abundant. *Length* rather less than 3 inches. The peculiar form when at rest, is the most remarkable characteristic of this Limax. In this state it assumes a more rounded form than any other slug I am acquainted with, and squeezes itself into so small a compass, that the height is but little exceeded by the length; for not only are the head and tentacles retracted beneath the shield, but even a portion of the foot also: while behind, *the tail is so much drawn in*, that that portion of the body assumes a *very truncated* appearance. This peculiarity is not mentioned by Messrs. Forbes and Hanley, nor is it at all conveyed by their figure. — *Alfred Merle Norman; Pyrton, Oxfordshire, August* 15, 1853.

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